

REMARKS

The Office Actions dated December 30, 2003 and June 3, 2005 have been carefully reviewed and the foregoing amendment and following remarks have been made in consequence thereof.

Applicants herewith submit the claims pending in the above named application as they stand. The claims are now consistent with the claims of the Amendment dated November 25, 2003.

Claims 1-9, 11-18, and 20-30 are now pending in this application. Claims 10 and 19 have been canceled. Claims 1-9, 11-18, and 20-30 stand rejected.

The rejection of Claims 1-9 and 21-27 under 35 U.S.C. § 101 as being directed to non-statutory subject matter is respectfully traversed.

Claim 27 recites a “computer-implemented method for automated management of a plurality of railroad transportation system and business entity assets by a transportation business entity”, “transmitting the set of transportation data to a central data center via a communication link”, and “transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.” Thus, Applicants submit that Claim 1 is directed to a useful process that is considered to be within “the technological arts.” Claim 1 transmits transportation data to a central data center via a communication link and transmits the recommendations to the plurality of railroad transportation system assets from a central data center in certain steps of the process. Claim 1 is therefore directed to a practical application in the technological arts.

Dependent Claims 2-8 and 21-27 depend from independent Claim 1, and these dependent Claims are submitted to satisfy the requirements of Section 101 for the same reasons set forth above with respect to independent Claim 1.

For at least the reasons set forth above, Applicants respectfully request that the Section 101 rejection of Claims 1-9 and 21-27 be withdrawn.

The rejection of Claims 1-9, 11-18, 20-21, 23, 25, and 27-29 under 35 U.S.C. § 103 as being unpatentable over Nickles et al. “Nickles” (U.S. Pat. No. 6,144,901) and Gibbs (U.S.

Pat. No. 5,836,529), and Pierro et al., “Pierro” (U.S. Patent No. 6,301,531) is respectfully traversed.

Applicants respectfully submit that none of Nickles, Gibbs, nor Pierro, considered alone or in combination describe or suggest the claimed invention. More specifically, at least one of the differences between the claimed invention and the cited references is that none of Nickles, Gibbs nor Pierro, considered alone or in combination, describe or suggest a method that includes collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset. None of Nickles, Gibbs nor Pierro, considered alone or in combination, describe or suggest automated management of a plurality of railroad transportation system assets and business entity assets by a transportation business entity. Notably, as discussed below, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train. However, Nickles does not describe nor suggest collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset. Rather, Nickles focuses on operating and training an operator to operate only one train.

Moreover, none of Nickles, Gibbs nor Pierro, considered alone or in combination, describe or suggest, comparing the collected data set to a standard data set to generate at least one problem area data that includes a transportation business entity schedule impact, and a transportation business entity asset requirement.

Furthermore, none of Nickles, Gibbs nor Pierro, considered alone or in combination, describe or suggest a method that includes, recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized; and transmitting the recommendations to the plurality of railroad transportation system assets and business entity assets to facilitate implementing the recommendations.

Notably, as discussed below, Gibbs describes generating alert signals after the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device. However, Gibbs does not describe or suggest recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets and transmitting the recommendations to the plurality of railroad transportation system assets and business entity assets to facilitate implementing the recommendations.

Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, the dynamic interaction of the cars and locomotives, and the current state of the pneumatic brake system. As described in Nickles, the primary function of the system is to optimize the operation of the train on which the system is operating. More specifically, utilizing dynamic data representative of conditions within the train along with fixed data representative of the track that the train is operating, the Nickles system monitors performance and performs calculations to create “a real-time display of the train dynamics.” Utilizing the displayed information, a crew, on this one train, is able to “better control the train.” See Col. 4, lines 55-58.

Gibbs describes an object based railroad transportation network display system 18. The transportation network 20 includes a set of mobile transports and a set of fixed transports. Using a set of wayside occupancy detectors 22, an output device, a memory and a processing unit, the system automatically maintains a transportation network database; automatically generates transportation network status statistics, performance statistics, and warning signals for user-selectable transports within a user-selectable geographic region; and outputs graphical representations of the generated statistics and the warning signals. Each wayside occupancy detector 22 identifies the presence of a mobile transport and in response, transmits a mobile transport detection signal to the processing unit. The memory, comprises a transport object that includes program instructions for automatically retrieving the set of transport detection signals and for automatically collecting a set of information related to operation of the transportation network. The memory further includes a service object

comprising program instructions for generating graphical representations of transport locations (based on the set of transport detection signals), transport status statistics, and transport performance statistics upon the output device corresponding to both the set of mobile transports and a set of fixed transports. The processing unit executes the program instructions stored in the memory and is coupled to the set of wayside occupancy detectors, the output device, and the memory. The output device is used for displaying information.

Pierro describes a method of predicting mechanical breakdown of a vehicle using a monitoring station to receive on-board systems parameter data that is transmitted from a vehicle at a remote location, whether any of the monitored data is out of a predetermined range is determined; trends for monitored data determined to be out of range are calculated, and any system fault are identified, and then determines which, if any, vehicle systems must be corrected to avoid vehicle failure and when such systems are likely to fail unless corrected is predicted.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Nickles is cited for managing a transportation system, and Gibbs is merely cited for its teaching of “recommending business activities relating to managing the transportation business entity based on at least one of the generated problem are data set and the comparison of the collected and standard data (i.e. ...if the data item deviate from the user specified value or a range of nominal or expected values, an alert signal is generated...warns the user of the variance....”, and Pierro is cited for disclosing activities relating to recommending business activities not disclosed by Nickles or Gibbs.

However, Applicants respectfully disagree with the assertions in the Office Action that Gibbs discloses recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. For example, at col. 4, lines 2-7 Gibbs describes:

The system and method automatically maintains a highly structured railroad system information database and generates multiply nested maps, tables, charts and alerts for providing varying levels of real-time perspective on an operating railroad system. These levels of perspective range from a "system-wide" view needed by executives, senior managers and planners to an individualized and detailed report needed by a customer service representative, a train master or a dispatcher. In addition, the system automatically generates alert signals according to customizable warning criteria whenever a variance from planned operation has occurred.

Gibbs merely describes setting alarm limits for monitored parameter and alerting an operator when the monitored parameter exceeds the alarm limit. Applicants respectfully traverse the assertion that generating alert signals from user specified limit values and warning the user of a variance between the ;limit and the monitored parameter by both an audible and a visual signal on the output device, as described by Gibbs is equivalent to recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. Specifically, in one embodiment, the present invention examines all delays to generate a list of largest delays. Unlike any combined cited art which merely provides an alarm that a value has exceeded a limit, the present invention detects the importance of the delay and assigns priorities to those delays having the largest impact on the system. If, for example, a main line or track is broken between New York and Chicago, this single delay would have a major impact upon all trains traveling between these two locations and as a result the entire railroad transportation system, which also would affect the transportation business entity. In contrast to the prior art that would simply detect one broken line without any special weighting or priority, the present invention monitors the delays caused by the broken track and would give this broken line higher priority than a broken track that might carry only one train per week. Using the significance of the delay information, the railroad

would assign more repair crews to the broken main line and allow the less traveled track to be fixed later.

Since there is no teaching nor suggestion in the cited art for the combination and the cited combination does not even describe the claimed invention, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Moreover, and to the extent understood, no combination of Nickles, Gibbs and Pierro, describes or suggests the claimed invention. Specifically, Claim 1 recites a computer-implemented method for automated management of a plurality of railroad transportation system and business entity assets by a transportation business entity, the plurality of railroad transportation system and business entity assets comprising a train including at least one locomotive and at least one of piece of rolling stock, at least one railroad support vehicle, at least one piece of railroad support equipment, and at least one business entity facility wherein the method includes “collecting at least one set of transportation data from at least one subsystem associated with railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset...transmitting the set of transportation data to a central data center via a communication link...comparing the set of collected transportation data set to a standard transportation data set...generating at least one problem area data set based upon the comparison of the collected and standard data, the problem area data set including a transportation business entity schedule impact, and a transportation business entity asset requirement...prioritizing each generated problem area data set relative to each other generated problem area data set...recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component

failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility...transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.”

None of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe or suggest a method for managing a transportation system by a transportation business entity wherein the method includes collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset. Specifically, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest collecting at least one set of transportation data from at least one sub-system associated with business entity assets.

Moreover, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest generating at least one problem area data set based upon the comparison of the collected and standard data wherein the problem area data set includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Furthermore, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. Further, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item

deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Nickles and Gibbs, and further in view of Pierro.

Claims 2-9, 21, 23, 25, and 27 depend from independent Claim 1. When the recitations of Claims 2-9, 21, 23, 25, and 27 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-9, 21, 23, 25, and 27 likewise are patentable over Nickles and Gibbs and further in view of Pierro.

Claim 11 recites an automated management system for managing a plurality of transportation system assets by a transportation business entity wherein the system includes “at least one sub-system for collecting at least one set of transportation data from respective ones of said plurality of transportation system assets...a sub-system for analyzing the at least one set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions...a sub-system for comparing the at least one set of collected transportation data set to at least one standard transportation data...a sub-system for generating at least one problem area data set based upon the comparison of the collected and standard data, the problem area data set including a transportation business entity schedule impact, and a transportation business entity asset requirement...a management and decision making sub-system that is configured to recommend business activities relating to managing the transportation business entity based on at least one of the generated problem area data set and the comparison of the collected and standard data wherein the business activities relating to managing the transportation business entity are based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized, and wherein the business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component

failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility...transmit the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations..”

None of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe or suggest an automated management system that includes a sub-system for collecting at least one set of transportation data from respective transportation system assets and a sub-system for analyzing the set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions. Specifically, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest analyzing the set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions. Rather, in contrast to the present invention, Pierro merely correlates vehicle trend data with a fault database, identifies the fault with a stored fault code, prioritizes the fault code with a historical fault database, and uses the trend data for the identified fault and comparing that data with a database to estimate a projected time-of-failure.

Moreover, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest a sub-system for generating at least one problem area data set based upon the comparison of the collected and standard data wherein the problem area data set includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Furthermore, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest a management and decision making sub-system that is configured to recommend business activities based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized, and wherein the business activities relating to managing the transportation business entity includes altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility. Further, none of

Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity. For at least the reasons set forth above, Claim 11 is submitted to be patentable over Nickles and Gibbs, and further in view of Pierro.

Claims 12-17 and 28 depend from independent Claim 11. When the recitations of Claims 12-17 and 28 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 12-17 and 28 likewise are patentable over Nickles and Gibbs and further in view of Pierro.

Claim 18 recites a system including a plurality of railroad transportation system and business entity asset sub-systems and a transportation business entity central data center wherein the system is configured to “collect at least one set of transportation data from a plurality of subsystems associated with said plurality of railroad transportation system and business entity assets...automatically modify a performance of controlled assets such total transportation system delays are minimized...compare said collected transportation data set to at least one standard transportation data...generate at least one problem area data set based upon the comparison of the collected and standard data without human intervention...prioritize top transportation system problem areas wherein said priority is based upon prioritize top transportation system problem areas wherein said priority is based

upon a total transportation business entity delay time facilitated being minimized...recommend business activities relating to managing the transportation business entity based on the prioritized transportation system problem areas wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action, altering a state of a transportation system environmental system, determining at least one location to place emergency equipment, recommending at least one repair facility location, determining an emergency equipment component inventory, and determining a repair facility component inventory.”

None of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe or suggest a system including a plurality of railroad transportation system and business entity asset sub-systems and a transportation business entity central data center wherein the system is configured to collect at least one set of transportation data from a plurality of subsystems associated with the plurality of railroad transportation system and business entity assets. Specifically, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest collecting transportation data from subsystems associated with business entity assets. Rather, in contrast to the present invention, Nickles describes collecting data from sub-systems located aboard a locomotive, Gibbs describes collecting data from wayside occupancy detectors, and Pierro describes collecting onboard systems parameter data from a remote vehicle.

Moreover, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest a system including a plurality of railroad transportation system and business entity asset sub-systems and a transportation business entity central data center wherein the system is configured to automatically modify a performance of controlled assets such total transportation system delays are minimized. Furthermore, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest a system configured to prioritize top transportation system problem areas wherein the priority is based upon a total transportation business entity delay time facilitated being minimized.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the

train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity.

For at least the reasons set forth above, Claim 18 is submitted to be patentable over Nickles and Gibbs, and further in view of Pierro.

Claims 20 and 29 depend from independent Claim 18. When the recitations of Claims 20 and 29 are considered in combination with the recitations of Claim 18, Applicants submit that dependent Claims 20 and 29 likewise are patentable over Nickles and Gibbs and further in view of Pierro.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-9, 11-18, 20-21, 23, 25, and 27-29 be withdrawn.

The rejection of Claim 24 under 35 U.S.C. § 103 as being unpatentable over Nickles et al. "Nickles" (U.S. Pat. No. 6,144,901) and Gibbs (U.S. Pat. No. 5,836,529), and Pierro et al., "Pierro" (U.S. Patent No. 6,301,531), and further in view of Goode, David R., "Pruning and improving the equipment fleet", "Goode" is respectfully traversed.

Nickles, Gibbs, and Pierro are described above. Goode describes Norfolk Southern's fleet optimization program that identifies railcars that "are unfit to load and uneconomical to operate" and railcars "known to have a high maintenance history" and removes them from service. Notably, Goode describes removing cars from service after they have been identified as being unfit to load, rather than predicting a life of a railcar and predicting a maintenance cost of the railcar over the life of the railcar as claimed in the present invention.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. It is impermissible to use the claimed invention as an

instruction manual or “template” to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Nickles is cited for managing a transportation system, and Gibbs is merely cited for its teaching of “recommending business activities relating to managing the transportation business entity based on at least one of the generated problem are data set and the comparison of the collected and standard data (i.e. ...if the data item deviate from the user specified value or a range of nominal or expected values, an alert signal is generated...warns the user of the variance...”, Pierro is cited for disclosing activities relating to recommending business activities not disclosed by Nickles or Gibbs, and Goode is cited for predicting a life of a railcar and predicting a maintenance cost of a railcar over the life of the railcar.

However, Applicants respectfully disagree with the assertions in the Office Action that Goode describes predicting a life of a railcar and predicting a maintenance cost of a railcar over the life of the railcar. Rather, Goode describes Norfolk Southern's fleet optimization program that identifies railcars that “are unfit to load and uneconomical to operate” and railcars “known to have a high maintenance history” and removes them from service. Thus, Goode describes removing cars from service after they have been identified as being unfit to load, rather than predicting a life of a railcar and predicting a maintenance cost of the railcar over the life of the railcar as claimed in the present invention.

Since there is no teaching nor suggestion in the cited art for the combination and the cited combination does not even describe the claimed invention, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Moreover, and to the extent understood, no combination of Nickles, Gibbs, Pierro and Goode, describes or suggests the claimed invention. Specifically, Claim 1 recites a computer-implemented method for automated management of a plurality of railroad transportation system and business entity assets by a transportation business entity, the plurality of railroad transportation system and business entity assets comprising a train including at least one locomotive and at least one of piece of rolling stock, at least one railroad support vehicle, at least one piece of railroad support equipment, and at least one business entity facility wherein the method includes “collecting at least one set of transportation data from at least one sub-system associated with railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset...transmitting the set of transportation data to a central data center via a communication link...comparing the set of collected transportation data set to a standard transportation data set...generating at least one problem area data set based upon the comparison of the collected and standard data, the problem area data set including a transportation business entity schedule impact, and a transportation business entity asset requirement...prioritizing each generated problem area data set relative to each other generated problem area data set...recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility...transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.”

None of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe or suggest a method for managing a transportation system by a transportation business entity wherein the method includes collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one

set of transportation data from at least one subsystem associated with a business entity asset. Specifically, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest collecting at least one set of transportation data from at least one sub-system associated with business entity assets.

Moreover, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest generating at least one problem area data set based upon the comparison of the collected and standard data wherein the problem area data set includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Furthermore, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. Further, none of Nickles, Gibbs, nor Pierro, considered alone or in combination, describe nor suggest transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity, and Goode describes Norfolk Southern's fleet optimization program that identifies railcars that “are unfit to load and uneconomical to operate” and railcars “known to have a high maintenance history” and removes them from service. This is in contrast to recommending business activities relating to managing the

transportation business entity, as described in the present invention, as being based on at least one of the generated problem area data set and the comparison of the collected and standard data. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Nickles, Gibbs, Pierro, and further in view of Goode.

Claim 24 depends from independent Claim 1. When the recitations of Claim 24 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 24 likewise is patentable over Nickles, Gibbs, Pierro, and further in view of Goode.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claim 24 be withdrawn.

The rejection of Claim 26 under 35 U.S.C. § 103 as being unpatentable over Nickles et al. "Nickles" (U.S. Pat. No. 6,144,901) and Gibbs (U.S. Pat. No. 5,836,529), and further in view of "The proof is in the payout", "Payout" is respectfully traversed.

Nickles, Gibbs, and Pierro are described above. Payout describes the results of a study indicating that intermodal transport is becoming safer as of 1990, when the study was conducted. Payout also describes the transport industry's efforts to achieve lower loss and damage claims industry-wide. Notably, Payout does not describe recommending business activities relating to managing the transportation business entity comprises determining at least one of an insurance claim type, a quantity of insurance claims, and a risk profile of at least one of a transportation carrier, railcar car, and a route.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Nickles is cited for managing a transportation system, and Gibbs is merely cited for its teaching of "recommending business

activities relating to managing the transportation business entity based on at least one of the generated problem are data set and the comparison of the collected and standard data (i.e. ...if the data item deviate from the user specified value or a range of nominal or expected values, an alert signal is generated...warns the user of the variance....”, Pierro is cited for disclosing activities relating to recommending business activities not disclosed by Nickles or Gibbs, and Payout is cited for recommending business activities relating to managing the transportation business entity comprises determining at least one of an insurance claim type, a quantity of insurance claims, and a risk profile of at least one of a transportation carrier, railcar car, and a route.

However, Applicants respectfully disagree with the assertions in the Office Action that Gibbs discloses recommending business activities relating to managing the transportation business entity based on at least one of the generated problem are data set and the comparison of the collected and standard data. For example, at col. 4, lines 2-7 Gibbs describes:

The system and method automatically maintains a highly structured railroad system information database and generates multiply nested maps, tables, charts and alerts for providing varying levels of real-time perspective on an operating railroad system. These levels of perspective range from a “system-wide” view needed by executives, senior managers and planners to an individualized and detailed report needed by a customer service representative, a train master or a dispatcher. In addition, the system automatically generates alert signals according to customizable warning criteria whenever a variance from planned operation has occurred.

Although the Office action apparently equates generating alert signals with recommending business activities relating to managing the transportation business entity, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device. This is in contrast to recommending business activities relating to managing the transportation business entity as described in the present invention as being based on at least one of the generated problem area data set and the comparison of the collected and standard data.

Applicants also disagree with the assertion within the Office Action that Payout describes recommending business activities relating to managing the transportation business entity comprises determining at least one of an insurance claim type, a quantity of insurance claims, and a risk profile of at least one of a transportation carrier, railcar car, and a route. Rather, Payout describes a loss and damage payout history over a period of time and describes methods various transport companies and their suppliers are using to further lower loss and damage payouts but, Payout does not describe nor suggest recommending business activities relating to managing the transportation business entity comprises determining at least one of an insurance claim type, a quantity of insurance claims, and a risk profile of at least one of a transportation carrier, railcar car, and a route.

Since there is no teaching nor suggestion in the cited art for the combination and the cited combination does not even describe the claimed invention, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Moreover, and to the extent understood, no combination of Nickles, Gibbs, Pierro, and Payout, describes or suggests the claimed invention. Specifically, Claim 1 recites a method for managing a transportation system by a transportation business entity wherein the method includes collecting at least one set of transportation data from at least one subsystem...comparing the at least one set of collected transportation data set to at least one standard transportation data...generating at least one problem area data set based upon the comparison of the collected and standard data...recommending business activities relating to managing the transportation business entity based on at least one of the generated problem area data set and the comparison of the collected and standard data wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action, altering a state of a transportation system environmental system, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility.”

None of Nickles, Gibbs, Pierro, nor Payout, considered alone or in combination, describe or suggest a method for managing a transportation system by a transportation business entity wherein the method includes collecting at least one set of transportation data from at least one sub-system, comparing the at least one set of collected transportation data set to at least one standard transportation data, generating at least one problem area data set based upon the comparison of the collected and standard data, and recommending business activities relating to managing the transportation business entity based on at least one of the generated problem area data set and the comparison of the collected and standard data wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action, altering a state of a transportation system environmental system, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility. Specifically, none of Nickles, Gibbs, Pierro, nor Payout, considered alone or in combination, describe nor suggest recommending business activities relating to managing the transportation business entity based on at least one of the generated problem area data set and the comparison of the collected and standard data wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action, altering a state of a transportation system environmental system, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type

of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity, and Payout describes a loss and damage payout history over a period of time and describes methods various transport companies and their suppliers are using to further lower loss and damage payouts. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Nickles and Gibbs, and further in view of Payout.

Claim 26 depends from independent Claim 1. When the recitations of Claim 26 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 26 likewise is patentable over Nickles and Gibbs and further in view of Payout.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claim 26 be withdrawn.

The rejection of Claims 22 and 30 under 35 U.S.C. § 103 as being unpatentable over Nickles et al. "Nickles" (U.S. Pat. No. 6,144,901) and Gibbs (U.S. Pat. No. 5,836,529), and Pierro et al., "Pierro" (U.S. Patent No. 6,301,531), and further in view of Bryan (U.S. Pat. No. 5,867,404) is respectfully traversed.

Nickles, Gibbs, and Pierro are described above. Bryan describes a computer system and method for detecting and monitoring defects in a railway that includes determining a position of the railway and a status of the railway, comparing the status with a historical status to determine a defect type of the railway, and displaying an icon associated with the defect type.

Applicants respectfully submit that none of Nickles, Gibbs, Pierro, nor Bryan considered alone or in combination, describe or suggest the claimed invention. More specifically, at least one of the differences between the claimed invention and the cited references is that none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe or suggest a method that includes collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset. None of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe or suggest automated management of a plurality

of railroad transportation system assets and business entity assets by a transportation business entity.

Moreover, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe or suggest, comparing the collected data set to a standard data set to generate at least one problem area data that includes a transportation business entity schedule impact, and a transportation business entity asset requirement.

Notably, as discussed below, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train. However, Nickles does not describe nor suggest generating a problem area data that includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Rather, Nickles focuses on operating and training an operator to operate only one train.

Furthermore, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe or suggest a method that includes, recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized; and transmitting the recommendations to the plurality of railroad transportation system assets and business entity assets to facilitate implementing the recommendations.

Notably, as discussed below, Gibbs describes generating alert signals after the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device. However, Gibbs does not describe or suggest recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets and transmitting the recommendations to the plurality of railroad transportation system assets and business entity assets to facilitate implementing the recommendations.

Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, the dynamic interaction of the cars and locomotives, and the current state of the pneumatic brake system. As described in Nickles, the primary function of the system is to optimize the operation of the train on which the system is operating. More specifically, utilizing dynamic data representative of conditions within the train along with fixed data representative of the track that the train is operating, the Nickles system monitors performance and performs calculations to create “a real-time display of the train dynamics.” Utilizing the displayed information, a crew, on this one train, is able to “better control the train.” See Col. 4, lines 55-58.

Gibbs describes an object based railroad transportation network display system 18. The transportation network 20 includes a set of mobile transports and a set of fixed transports. Using a set of wayside occupancy detectors 22, an output device, a memory and a processing unit, the system automatically maintains a transportation network database; automatically generates transportation network status statistics, performance statistics, and warning signals for user-selectable transports within a user-selectable geographic region; and outputs graphical representations of the generated statistics and the warning signals. Each wayside occupancy detector 22 identifies the presence of a mobile transport and in response, transmits a mobile transport detection signal to the processing unit. The memory, comprises a transport object that includes program instructions for automatically retrieving the set of transport detection signals and for automatically collecting a set of information related to operation of the transportation network. The memory further includes a service object comprising program instructions for generating graphical representations of transport locations (based on the set of transport detection signals), transport status statistics, and transport performance statistics upon the output device corresponding to both the set of mobile transports and a set of fixed transports. The processing unit executes the program instructions stored in the memory and is coupled to the set of wayside occupancy detectors, the output device, and the memory. The output device is used for displaying information.

Pierro describes a method of predicting mechanical breakdown of a vehicle using a monitoring station to receive on-board systems parameter data that is transmitted from a vehicle at a remote location, whether any of the monitored data is out of a predetermined range is determined; trends for monitored data determined to be out of range are calculated,

and any system fault are identified, and then determines which, if any, vehicle systems must be corrected to avoid vehicle failure and when such systems are likely to fail unless corrected is predicted.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Nickles is cited for managing a transportation system, and Gibbs is merely cited for its teaching of “recommending business activities relating to managing the transportation business entity based on at least one of the generated problem are data set and the comparison of the collected and standard data (i.e. ...if the data item deviate from the user specified value or a range of nominal or expected values, an alert signal is generated...warns the user of the variance....”, Pierro is cited for disclosing activities relating to recommending business activities not disclosed by Nickles or Gibbs, and Bryan is cited for a selected type of delay comprises at least one of maintenance delays and broken track delays.

However, Applicants respectfully disagree with the assertions in the Office Action that Gibbs discloses recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. For example, at col. 4, lines 2-7 Gibbs describes:

The system and method automatically maintains a highly structured railroad system information database and generates multiply nested maps, tables, charts and alerts for providing varying levels of real-time perspective on an operating railroad system. These levels of perspective range from a “system-wide” view needed by executives, senior managers and

planners to an individualized and detailed report needed by a customer service representative, a train master or a dispatcher. In addition, the system automatically generates alert signals according to customizable warning criteria whenever a variance from planned operation has occurred.

Gibbs merely describes setting alarm limits for monitored parameter and alerting an operator when the monitored parameter exceeds the alarm limit. Applicants respectfully traverse the assertion that generating alert signals from user specified limit values and warning the user of a variance between the ;limit and the monitored parameter by both an audible and a visual signal on the output device, as described by Gibbs is equivalent to recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. Specifically, in one embodiment, the present invention examines all delays to generate a list of largest delays. Unlike any combined cited art which merely provides an alarm that a value has exceeded a limit, the present invention detects the importance of the delay and assigns priorities to those delays having the largest impact on the system. If, for example, a main line or track is broken between New York and Chicago, this single delay would have a major impact upon all trains traveling between these two locations and as a result the entire railroad transportation system, which also would affect the transportation business entity. In contrast to the prior art that would simply detect one broken line without any special weighting or priority, the present invention monitors the delays caused by the broken track and would give this broken line higher priority than a broken track that might carry only one train per week. Using the significance of the delay information, the railroad would assign more repair crews to the broken main line and allow the less traveled track to be fixed later.

Further, Applicants disagree with the assertion that Bryan describes that a selected type of delay comprises at least one of maintenance delays and broken track delays. Rather, Bryan describes a track monitoring system that operate continuously to senses tie and packing anomalies associated with a section of track and generates work orders to schedule a repair. Bryan does not describe nor suggest any type of delay associated with maintenance and broken tracks.

Since there is no teaching nor suggestion in the cited art for the combination and the cited combination does not even describe the claimed invention, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Moreover, and to the extent understood, no combination of Nickles, Gibbs, Pierro, nor Bryan, describes or suggests the claimed invention. Specifically, Claim 1 recites a computer-implemented method for automated management of a plurality of railroad transportation system and business entity assets by a transportation business entity, the plurality of railroad transportation system and business entity assets comprising a train including at least one locomotive and at least one piece of rolling stock, at least one railroad support vehicle, at least one piece of railroad support equipment, and at least one business entity facility wherein the method includes “collecting at least one set of transportation data from at least one subsystem associated with railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset...transmitting the set of transportation data to a central data center via a communication link...comparing the set of collected transportation data set to a standard transportation data set...generating at least one problem area data set based upon the comparison of the collected and standard data, the problem area data set including a transportation business entity schedule impact, and a transportation business entity asset requirement...prioritizing each generated problem area data set relative to each other generated problem area data set...recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized wherein recommending business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility...transmitting the recommendations to the

plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.”

None of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe or suggest a method for managing a transportation system by a transportation business entity wherein the method includes collecting at least one set of transportation data from at least one sub-system associated with a railroad transportation system assets and collecting at least one set of transportation data from at least one subsystem associated with a business entity asset. Specifically, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest collecting at least one set of transportation data from at least one sub-system associated with business entity assets.

Moreover, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest generating at least one problem area data set based upon the comparison of the collected and standard data wherein the problem area data set includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Furthermore, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest recommending business activities relating to managing the plurality of railroad transportation system assets and business entity assets of the transportation business entity based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized. Further, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest transmitting the recommendations to the plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time or “live” representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring

system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Nickles, Gibbs, Pierro, and further in view of Bryan.

Claim 22 depends from independent Claim 1. When the recitations of Claim 22 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 22 likewise are patentable over Nickles, Gibbs, Pierro, and further in view of Bryan.

Claim 11 recites an automated management system for managing a plurality of transportation system assets by a transportation business entity wherein the system includes “at least one sub-system for collecting at least one set of transportation data from respective ones of said plurality of transportation system assets...a sub-system for analyzing the at least one set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions...a sub-system for comparing the at least one set of collected transportation data set to at least one standard transportation data...a sub-system for generating at least one problem area data set based upon the comparison of the collected and standard data, the problem area data set including a transportation business entity schedule impact, and a transportation business entity asset requirement...a management and decision making sub-system that is configured to recommend business activities relating to managing the transportation business entity based on at least one of the generated problem area data set and the comparison of the collected and standard data wherein the business activities relating to managing the transportation business entity are based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized, and wherein the business activities relating to managing the transportation business entity includes at least one of altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility...transmit the recommendations to the

plurality of railroad transportation system assets from a central data center to facilitate implementing the recommendations..”

None of Nickles, Gibbs, Pierro, nor Bryan considered alone or in combination, describe or suggest an automated management system that includes a sub-system for collecting at least one set of transportation data from respective transportation system assets and a sub-system for analyzing the set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions. Specifically, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest analyzing the set of collected transportation data set for at least one of failure modes and effects, anticipated failure probabilities, and failure corrective actions. Rather, in contrast to the present invention, Pierro merely correlates vehicle trend data with a fault database, identifies the fault with a stored fault code, prioritizes the fault code with a historical fault database, and uses the trend data for the identified fault and comparing that data with a database to estimate a projected time-of-failure.

Moreover, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest a sub-system for generating at least one problem area data set based upon the comparison of the collected and standard data wherein the problem area data set includes a transportation business entity schedule impact, and a transportation business entity asset requirement. Furthermore, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest a management and decision making sub-system that is configured to recommend business activities based on the priority of the problem area data sets such that a total transportation business entity delay time is facilitated being minimized, and wherein the business activities relating to managing the transportation business entity includes altering an asset allocation priority, generating a maintenance action based on an at least one of an actual and an anticipated failure due to recent transportation system activity, altering a state of a transportation system environmental system to protect a cargo, and based on component failure analysis, determining at least one location of emergency equipment, recommending at least one location for a repair facility, determining an emergency equipment inventory, and determining an inventory for each repair facility. Further, none of Nickles, Gibbs, Pierro, nor Bryan, considered alone or in combination, describe nor suggest transmitting the recommendations to the plurality of railroad

transportation system assets from a central data center to facilitate implementing the recommendations.

Rather, Nickles describes a real-time locomotive engineer training tool that has the ability to display a real-time representation of a single train on the current track, and a real-time display which shows a graphical and numerical representation of the current state of the train, Gibbs describes generating alert signals wherein the user is prompted to specify a value or range of values for any selected map or report data item, after which, the map object or the report object monitors the real-time value of the data item, such that if the data item deviates from the user specified value or range of nominal or expected values, an alert signal is generated and the map object or report object warns the user of the variance by both an audible and a visual signal on the output device, and Pierro describes a vehicle monitoring system that collects data from a locomotive, transmits the data to a remote monitoring station where the data is trended to anticipate faults. The faults are categorized according to the type of fault and prioritized merely by comparing the fault category to a database entry that associates fault categories to fault severity.


For at least the reasons set forth above, Claim 11 is submitted to be patentable over Nickles and Gibbs, Pierro, and further in view of Bryan.

Claim 30 depends from independent Claim 11. When the recitations of Claim 30 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claim 308 likewise is patentable over Nickles and Gibbs, Pierro, and further in view of Bryan.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 22 and 30 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited. If, during review of this response, the examiner believes a telephone interview would aid in the prosecution of this application, the Examiner is kindly invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,



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